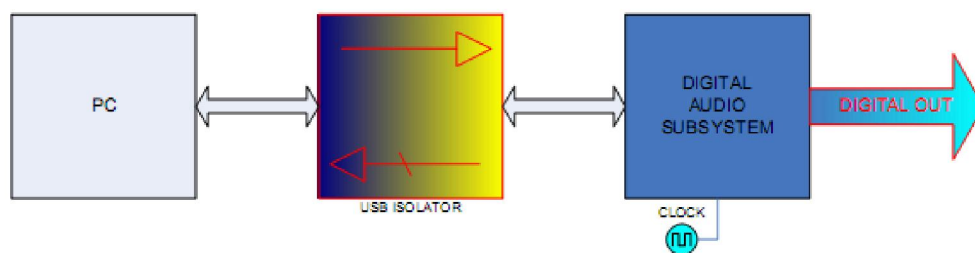
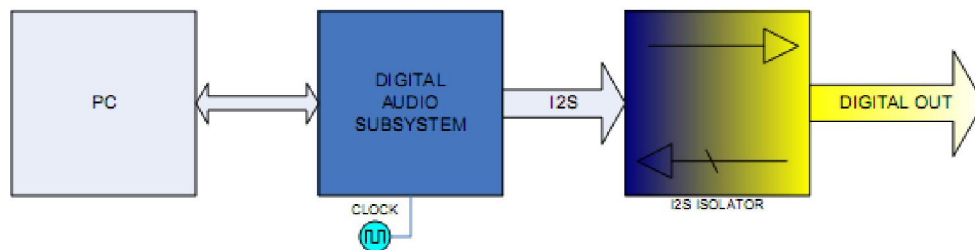


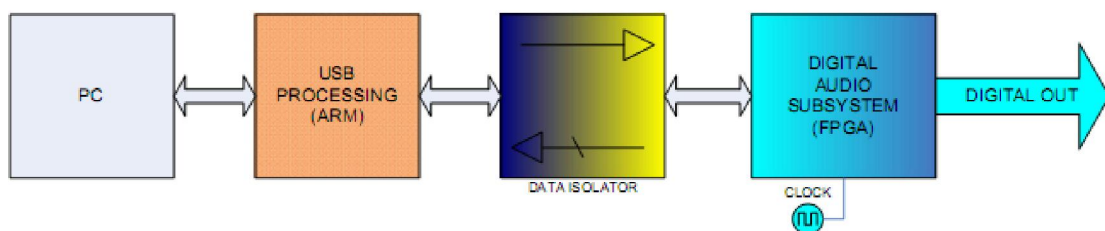
DIAGRAM 1 : Comparison between typical usb isolation schemes and Hydra-X



TYPICAL USB ISOLATION SETUP A : sample rate limited

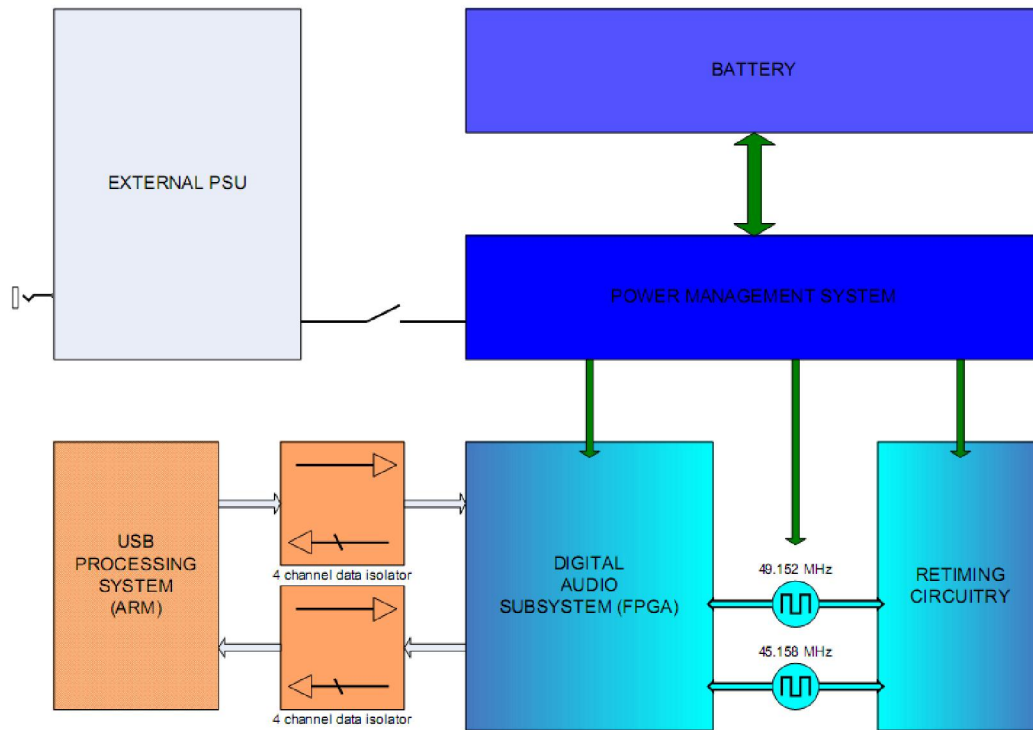


TYPICAL USB ISOLATION SETUP B : added jitter



HYDRA SOLUTION : isolation is placed between usb and audio processors
- no sample rate limitation
- no added jitter

DIAGRAM 2: Internal system architecture



Audiobyte Hydra-X system architecture

EXTERNAL PSU BLOCK : being fully isolated from USB power, Hydra-X will always need an external power supply to recharge the battery.

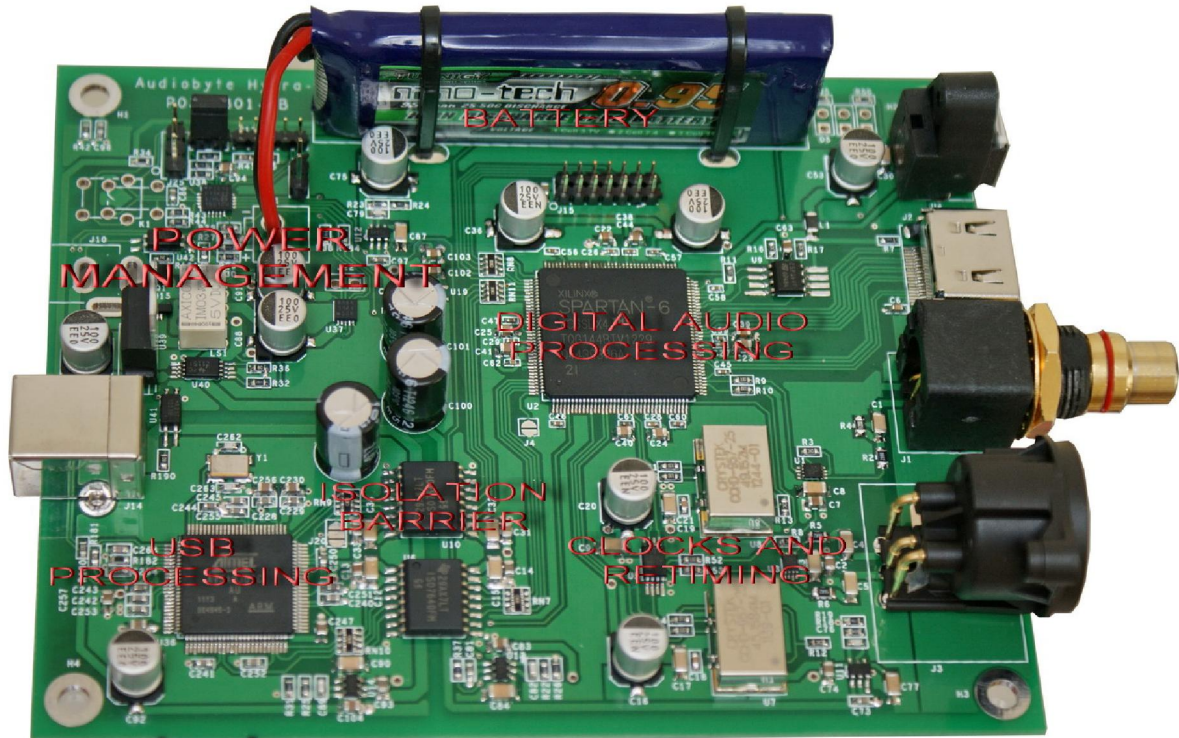
BATTERY : the main power source for Hydra-X; a low noise, low impedance lithium nanotech battery will guarantee clean power for the audio device.

POWER MANAGEMENT SYSTEM : Hydra-X integrates a sophisticated power management system. This will monitor battery status, charge it when necessary, and will enable a low-consumption mode when usb connection is not present for saving battery life.

USB PROCESSING & ISOLATION : latest generation ARM processor will handle highest PCM and DSD sample rates. The USB side is isolated by audio side with high performance SiO₂ 5KV isolation barrier.

DIGITAL AUDIO SUBSYSTEM : a Spartan6 field-programmable-gate-array (FPGA) with our custom firmware will take care of audio data, formatting it in common s/pdif, aes/ebu and I2S standards. The audio streams are made using local master-clocks (asynchronous operation).

CLOCKS AND RETIMING CIRCUITRY : Ultra-low phase noise clocks CCHD957 are used in Hydra-X for best sonic experience. Retiming circuitry is used to clean up residual jitter that can occur on fpga output.



Brief technical specifications :

384KHZ PCM / 5.6 MHz DSD asynchronous playback

AES/EBU, S/PDIF, TOSLINK, I2S outputs

Battery cycle : approx. 540 min. playback / 90 min. charging*

Fully USB isolation 5 KV

*during battery charging , the device will be powered automatically from external power supply

For more information please visit www.audiobyte.ro or write us at info@audiobyte.ro